

WHAT IS CLAIMED IS:

1. A torque distribution control device for a four-wheel drive vehicle having an electromagnetic clutch for distributing to sub-drive wheels a torque transmitted from an engine to prime drive wheels and current apply means for applying a command electric current corresponding to a command torque to an electromagnetic coil of said electromagnetic clutch, said torque distribution control device comprising: command torque operation means for determining said command torque based on a vehicle speed, a throttle opening degree and a rotational speed difference between said prime drive wheels and said sub-drive wheels; and command torque limit processing means for limiting said command torque to an upper limit value therefor or below in dependence on an engine torque.

2. A torque distribution control device as set forth in Claim 1, wherein said command torque operation means for determining said command torque is composed of pre-torque operation means for determining a pre-torque based on said vehicle speed and said throttle opening degree; compensation torque operation means for determining a compensation torque based on said rotational speed difference between said prime drive wheels and said sub-drive wheels and said vehicle speed; and addition means for calculating said command torque by the addition of said pre-torque to said compensation torque.

3. A torque distribution control device as set forth in Claim 1, wherein said command torque limit processing means estimates said engine torque from at least the rotational speed of said engine and determines said upper limit value for said command torque based on said estimated engine torque.

4. A torque distribution control device as set forth in Claim 3, wherein said command torque limit processing means estimates said engine torque from both of the rotational speed of said engine and said throttle opening degree.